

STAT



WTC
WTC
separate copy
July 11, 1964

These are the physical-metallurgical properties of importance in materials for measuring-engine construction:

1. Modulus of elasticity (Young's Modulus).
2. Density.
3. Ratio of Young's Modulus to density (stiffness to weight ratio).
4. Thermal capacitance.
5. Thermal conductivity.
6. Coefficient of thermal expansion.
7. Creep or long term dimensional stability (strain relaxation).
8. Internal damping.
9. Ease of fabrication.

The properties will be investigated, compared, and evaluated for:

1. Meehanite.
2. Steel.
3. Granite.
4. Aluminum.
5. Magnesium.
6. Glass.

Certain geometrical principles of construction which will maximize rigidity may be of equal importance to the characteristics of the materials. These principles will be enumerated and described. It is surprising how often the basic principles are violated in construction design.



STAT

Declass Review by NGA.